

SPECIFICATION

Followed by reference number (1) to (18) in figure 1 page 3.

Number (1): The surface housing cooker is made of die cast aluminum alloy. The bottom is of 0.65 inch thick. It has two screw threads inside, which are used to hold the heater in place with screws. The wall of the housing cooker is of 0.05 thick.

Number (2): The heater part number is Bosch 025-201-001.

Number (3): Two thermal switches: The part number for switch 1 is KSD 301, and this switch is normally open. It closes when the temperature reaches 200 degree Celsius or higher. The switch connects the reset pin IC 555 to ground, and turn off two heaters.

Thermal switch 2 of part number 17AMC150 is normally closed, and it opens when temperature reaches 100 degree Celsius. It opens the circuit pin output of IC 555, and turns off two heaters. Thermal switch 2 has one terminal that connects to the relay to control the on/off of the two heaters.

Number (4): The rolling switch turns off the timer and heaters when the car is involved in an accident by the grounding the reset pin of IC555.

Number (5): Integrated circuit PC board: it has terminals connect to the main switch, the trigger switch, two LEDS, the timer switch, temperature switches 1 and 2, and the rolling switch.

Number (6): Main switch controls the on/off of the coffee maker.

Number (7): The cap of the stainless steel cup is made of plastic, and it has threads to secure the cap to the cup to prevent spilling.

Number (8): The safety door switch allows heaters to be on only when the safety cap

cover is closed.

Number (9): The stainless steel cup works as a pot for cooking.

Number (10): There is a small hole on top of the cap for drinking.

Number (11): There is small hole on top of the cap for releasing pressure when water is boiling.

Number (12): The handle of the cup is made of plastic.

Number (13): A coffee unit has five sides.

Number (14): The safety cap helps to secure the cup firmly in the housing cooker if an accident should happen.

Number (15): Female DC 12 volt plug.

Number (16): There are two LEDs. The green LED1 is for indicating power is available, and the red LED2 is on when the heaters are operating.

Number (17): The trigger switch enables the unit to start cooking.

Number (18): The timer switch sets time for cooking. There are three settings. The high setting takes 20 minutes to cook; the medium setting takes 30 minutes; and the low setting takes 45 minutes. The heaters automatically turns off after the set time is expired.

AUTOMOTIVE COFFEE MAKER.

BACKGROUND OF THE INVENTION.

The invention relates to a DC electric cooker. Using the power 12 volt in vehicle for heating or boiling a small volume of liquid to make a cup of instant coffee; A cup of noodle soup or to reheat food ; Milk when drivers are driving or traveling .

SUMMARY OF THE INVENTION.

The primary of the invention is an integrated circuit to energize two DC heaters. Heat transfer to surface housing cooker at a preset temperature 100°C. A timer 555 controls timing and deenergizes the heaters. Driver simply puts a stainless steel cup on the surface housing cooker. Liquid in the cup will be heated up.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

Figure 1 is a view of an automotive coffee maker.

Figure 2 is a schematic of the integrated circuit.

DETAILED DESCRIPTION OF THE INVENTION.

Detailed of figure 1:

1 The surface housing cooker; 2 Two heaters; 3 Two thermal switches; 4 Rollover switch; 5 Integrated circuit PC board; 6 Main switch; 7 Cap of the cup; 8 Safety switch; 9 The stainless steel cup; 10 Small hole for to drink; 11 Small hole; 12 Handle; 13 Five side covers of the coffee maker; 14 Safety cap cover; 15 Female DC 12 volt plug.; 16 Two leds; 17 Trigger switch; 18 Timer switch;

.Detailed of figure 2

Semiconductors; 1 Voltage regulator IC 78L08 ; 1 Timer IC LM555N; 1 N channel mosfet IC IRF 510;

Resistors; 2 Resistors . 0.5 k ohm; 1 Resistor 20M ohm; 1 Resistor 7 M ohm; 1 Resistor 3 M ohm; 2 Resistors 2 M ohm; 1 Resistor 10k ohm;

Leds; Two leds

Diodes; 2 diodes 1N914

Capacitors; 1 Electrolytic capacitor 100uF ; 1 Electrolytic capacitor 0.1uF; 1 Monolithic ceramic capacitor 0.01uF; 1 Tantalum capacitor 80 uF;

Switches; 1 Thermal switch 100°C ; 1 Thermal switch 200°C ; 1 Safety switch 1 Rollover switch; 1 Main switch; 1 Trigger switch. 1 SP3T switch;

Heaters ; 2 DC heaters 12 volt..1 Relay 12 volt SPST

1 Fuse 35 A

How do they work.

To start the monostable state by push trigger switch to ground to start to cook..When the charge on C3 is $\frac{2}{3} V_{cc}$,the timer 555 turns off two DC heaters
Temperature switch 2 controls temperature of the surface housing cooker.
Temperature switch 1 turns off two heaters when the surface housing overheat at 200°C.

Rolling switch turns off two heaters when vehicle in car accident.

Timer switch controls three levels Low .Middle.High of timing.